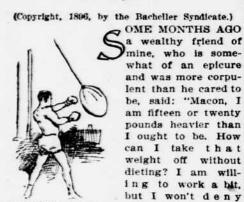
PUNCHING THE BALL

A Healthful and Weight-Reducing Exercise.

GOOD ADVICE TO HEAVY-WEIGHTS

Beautiful Exhibitions by Champion Pugilists.

GENERAL DIRECTIONS



myself the pleasures of the table." "Punch the ball," I responded. "Ball punching is one of the best physical methods of reducing the weight and improving the wind of fleshy people. When a ball is fought, energetically and persistently, the exercise produces profuse perspiration. Every muscle of the body and limbs is brought it to play and there is little or no darger of straining any of them, and that is more than can be said of "pulley lifting" and many other kinds of gymnastic work Fat fairly melts away from the regular ball puncher, and he obtains nearly all the benefits of sparring without any of its inconveniences, such as bloody noses, black eyes or bruises." My friend took my advice, bought him a punching ball, fought it every day for fifteen or twenty minutes according to my advice, and now he tips the scale twenty pounds lighter than be was, and he looks and feels 50 per cent better than he did before he began the ex-The Old Apparatus.

The "punching ball" of today differs very materially from the "fighting bag" which was used in the days of Tom Hyer, Yankee Sullivan, Heenan and Sayers, and even in Jce Coburn's time. The bag then used was a huge affair, nearly as tall as a man and twice as bulky. It was filled with cot-ton, oats and such like heavy yielding material until it weighed about what its user's intended opponent was supposed to scale. It was suspended by a rope from the ceil-ing in a room so that its center of gravity was a little above its user's shoulders. Naturally, in responding to blows, pushes or shoves, it swung slowly and ponderous ly. The man who fought it not only punch-ed it with all his power, but collided against it with his shoulders and body. This meth-



the jostling and shouldering opponents

were expected to receive in a fight. The "Fast" Ball.

The first "fast ball" worthy of note was the invention of the proprietor of a Cleveland symnasium, named Professor Rumsey who is credited with being Mark Hanna's teacher of sparring. This bag or ball was merely a rubber ball, about a foot in diameter, inclosed in a canvas covering and suspended from the ceiling by a cord. The bottom of the ball, which was hung on a level with its user's shoulders, was fastened to the floor by a rubber strap, which was just loose enough to permit the ball to fly back about a foot when sharply hit and cause it to quickly rebound. This ball was a great improvement on its predecessor, for its use made a man much quicker in his movements. Its great defect was the fact that it had to be driven away directly in a line with the puncher's position or it would revolve in a circle and have to be stopped to

general construction somewhat akin to the foot ball employed by our collegians in their games, only ordinary leather is used the covering instead of pigskin. The ball is usually suspended from a celling, but where the ordinary celling is too high a wooden disk about six or eight feet in di-ameter is used instead. This disk is mainly what makes the ball so useful. Ordinarily it is suspended from the regular ceiling



strong iron rods, so that it forms a pseudo-ceiling about eight or nine feet above the floor. The cord suspending the ball can be raised or lowered so that the center of the desire, to the level of either his chin or shoulders. Generally the cord is attached to the ball by a metal swivel, which permits it to revolve longitudinally should it not be

John L. as a Bag Puncher.

John L. Sullivan was the first pugilist of note to use the present form of ball in his training. A few days before he fought Paddy Ryan for the championship of America at Mississippi City he gave an exhibition of ball punching in his training quarters at Carrollton, above New Orleans, that amazed and delighted his friends. His last blow burst the ball, and as it collapsed Arthur Chambers exclaimed: "John, if I let go that way at Ryan in the

see you let go that way at Ryan in the ring I'll shut my eyes, for I don't want to see him murdered."

Dominick McCaffrey was the first pugilist to give public exhibitions of ball punching. They were given in a Bowery museum, but they did not meet with the hearty approval of the "toughs" of that famous thoroughfare. It was just after his four-

round contest with Charley Mitchell, and he was frequently told by members of his "awjence," "Oh, yes! you kin punch a ball all right, but how about Charley Mitchell?" Corbett's Skill.

One of the greatest exhibitions of ball punching ever witnessed was that given by Jim Corbett in Madison Square Garden a few days before he started south to wrest the championship from John L. Sullivan. On that occasion the disk used on the stage was two feet six inches above the top of his head, and the center of the ball was just below his chin. Among his other feats that day he fought the ball with both hands as rapidly as he could hit out for three minutes without cessation. Good judges estimated that he sent the ball against the disk not less than 120 times each minute or 300 times in all. The ball against the disk not less than 120 times each minute, or 360 times in all. The ball was blown up very tight and its resilliancy was very great. Assuming that the ball traveled five feet each time it was struck it went 1,800 feet in all, or about one-third of a mile. This was great speed when it is remembered that the ball changed direction 240 times a minute. ticn 240 times a minute.

Four Great Punchers.

The four greatest ball punchers in the pugilistic profession are Tommy Ryan, Jim Corbett, Bob Fitzsimmons and Young Griffo. Parson Davies claims that Ryan is the best of the lot, and I am inclined to agree with him. Corbett makes ball nunching one of the features of his theatrical entertainments. Bob Fitzsimmons alternates his fist blows with jabs with his elbows and he can make the ball fairly "ouch" each time he uses them on it. Griffo, too, is very good

People who wish to punch the ball as an exercise should suspend it in a room which, while well ventilated, is free from drafts. They should strip to the waist, and wear nothing but drawers and slippers. It is well to incase the hands in loose kid gloves from which the fingers have been cut. This will prevent any abrasion of the knuckles, which is sometimes caused by glancing blows. One-minute rounds are long enough



for a beginner, with two minutes' rest be-tween each round. Plenty of good, coarse Turkish towels should be used to wipe off the perspiration caused by the exercise. Five rounds each day are enough for a be-ginner for the first few weeks. After that, for the next fortnight the length of the rounds can be increased to two minutes. I would never advise lengthening the rounds beyond three minutes and care must be tak-en never to unduly tire oneself. After a bout with the ball the body should be wiped until thoroughly dry, then a quick sponge bath should be taken, and if the puncher, after drying himself, will rub himself with witch hazel and alcohol and hand-rub himself antil he is perfectly dry, and then don clean underwear, he will go forth from the room not only lighter in body and heart than he was when he entered it, but also wonder-fully refreshed and invigorated.

J. B. (MACON) McCORMICK.

SLAVE SALES IN MOROCCO.

Why Auctions Are Always Held After Dark. From the London Daily Telegraph.

There has just returned to London a genleman, Mr. G. Herbert Phillips, who, in the course of ten months' wandering, spent weeks in the dom Sultan of Morocco.

The house in which Mr. Phillips stayed at Fez was the same as that which Sir Euan Smith occupied when he made his memorable visit there, some few years

"I asked my host," said Mr. Phillips,

whether there was a slave market at Fez.

as I was curious, if such were the case,

to visit it. He told me there was, and that he would inquire when there would be a sale. The result of the inquiry was that on the evening of Sunday, May 31 last, I was conducted to what had the appearance of an old-fashioned market place. ance of an old-fashioned market place. There was an open square, and round was a kind of arcade in which the people sat. The slaves who were The slaves, who were Soudanese negresses, rought up from the Soudan through the desert in caravans, were ranged in a re-cess in the corner. The slave dealers, healthy and substantial-looking men, led out each of the slaves in turn, and in Arabic shouted out the merits of each. These slave sales are invariably held in the evening, the idea being that if there are any imperfections in face or figure the are less likely to be noticed in the twi Eight women and two girls were offered for sale, and before the actual bid-ding commenced the intending purchasers went up to the recess in which the slaver The first woman brought out was one ar parently about twenty-two years of age, although she might have been less, as they age very quickly. She was dressed in a kind of calico covering with a girdle. There was bidding in the usual auction way, the dealers going round and shouting out the offers as they were made. The bidding was, of course, in Moorish money, and the first woman was bought for a sum equivalent in English money to nearly £10. Ther young girl of perhaps ten years was sold, he price in her case being about f11. During all this I was standing under the ar-cade, but, being dressed in an ordinary English tourist suit, I kept behind the Moors who accompanied me, and, so far, had been unobserved. I was aware that the Moors object to any stranger being present at these sales, as they do not wish information about the traffic to get abroad. I had seen the two sold, and in the case of the girl the scene was heartrending, as she cried bitterly and was greatly distressed. I could stand it no longer, and walked out into the middle of the square, and the large attendance of Moors present then saw that a European was there. They gathered together in little groups, there was a hurried whispering among them, the unsold slaves were formally marched off. present proceeding to the great mosque

mear by."

Mr. Phillips proceeded to point out that it would have been useless for him to purchase any of the slaves and set them free. Besides giving an encouragement to slave lealing, it would be mistaken philanthropy. About two years ago a European, acting from the best motives, purchased through a Moor at this same slave market one of these Soudanese girls and gave her her liberty, but as he could not provide for her permanently, and she could not go back to her cwn country, the result was

Cables Catch Whales. From the Boston Globe.

Submarine cables are usually imbedded n the slimy bottom of the ocean, but at certain points they hang like wire bridges over deep submarine valleys, so that whales and othe: large inhabitants of the deep may become dangerous to the cable Once in a while it is the cable that becomes dangerous to the whales, as recently shown in an accident to the Western Brazilian line.

There was some difficulty with the wire and after many futile efforts the seat of the trouble was discovered seventy-six miles north of Santa Catharina. The cable miles north of Santa Catharina. The cable ship Viking was sent to repair the damage, and began to take up the wire. After the cable proper had been grappled and was wound to the surface on the large drums provided for the purpose, it was found that it floated very much easier and was more buoyant than is usually the was more buoyant than is usually the case.

The reason was discovered when in a loop of the cable the carcass of a whale of more than sixty feet in length came into view. It appears that the whale had become caught under the cable, and, not being able to lift it nor to go forward or back, it became suffocated. By its last spasms or attempts to free itself the whale had damaged the cable so that the insulation was rubbed off and the wire became use-

BY C. B. LEWIS.

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Company's ship, the Star of India, set sail from Madras for London, having on board over 200 passengers, and among them Lord Glenham, Gen. Swift, Lady Artwell and her two daughters, and other men and women of note at home and abroad. Aside from her general cargo, the ship carried treasure to the amount of a quarter of a million dollars. The bankers at Madras figured out that the passengers must have had at least that the passengers must have had at least \$100,000 among them, while an Indian potentate, on his way to be received as s guest of royalty, had a strong box of jeweiry and gems valued at so great a sum that no one dared speak it. It was intended that the ship should be convoyed as far as the Cape of Good Hope by a man-of-war, as there were plenty of pirate craft still affoat. elry and gems valued at so great a sum that there were plenty of pirate craft still affoat,

The less of the Star made a great sensation for several reasons, and when it was finally concluded that she had been lost various vessels were sent in search of her, and every effort was made to ascertain her fate. In 1856 a Malay sailor who died aboard of an English tea ship told her cantain that the Star was retained as her captain that the Star was attacked and captured by pirates to the south of Ceylon, and that he was one of the men engaged in the attack. He said there were five native crafts, and that they came upon the Star in a calm and carried her by boarding. The stip made a long and stubborn resistance, but was finally captured, and the pirates had suffered such heavy loss that in revenge they killed everybody to the last child. They then looted the ship and scuttled her, and the plunder was subsequently divided on an island in the China sea. Some people believed the sea. Some people believed this story and some said it was absurd. The general idea the gang to justice was given up as im-

strange a sight as the eyes of a sailor ever beheld. It was a ship, to be sure, but one had to rub his eyes and look again and again to be certain of it. There was the great hull—there the three masts—up aloft the yards, and there were scores of ropes trailing about like slimy serpents. From stem to stern and from keel to masthead the fabric was covered with mud and slime and barnacles and sea grass and shells, and as she rested there the water poured off her decks and out of her hold in such a sobbing, choking way as to bring the shivers. Not a word had passed between the pair of us while the wave raced in and across the island, and the ground below us was clear of the last In the year 1849 the Honorable East India

After a couple of hours, to let the ground

dry out a bit we descended the hill to see what damage had been done. About one-half the trees on the island had been uprooted and carried out to sea, and of our but not a vestige remained. but the government vessel met with a mishap at sea and was detained somewhere,
and the Star finally decided to sail without
her, and there was little fear but that she
could take care of herself. Two days out of
Madras she was sighted and reported, but
that was the last seen or heard of her until
the year 1864.

The less of the Star made a great sensation for several reasons, and when it
was finally concluded that she had been
lest without fish were so numerous that we were hours
in gathering them up and giving them to
the tide to bear away. Two hours after
the last shock the sky cleared, the sun
came out, and by night the island was
fairly dry in all parts. We, however, gave
the ship all the next day to get rid of her
water and harden in the hot sun. You are
prepared to bear, of course, that she
proved to be the long lost Star of India.
We found that out before we had been
later on we had a dozen reasons for believing that the dying Malay had spoken fish were so numerous that we were hours lieving that the dying Malay had spoken

the truth.

I tell you that ship was a queer sight.
Her ocean bed had been hundreds of feet deep, and the mud covered everything to the depth of a foot—in some places two or three. Neither of us had heard of the Star or her loss but we knew the sweet to see the star or her loss but we knew the sweet to see the star or her loss but we knew the sweet to see the see the sweet the sweet the sweet to see the see that sweet the three. Neither of us had heard of the Star or her loss, but we knew this wreck to be that of an Indiaman, and we went at it to clear away the stuff and get into her. We were a full week doing this, and at every turn we came across evidences to prove the story of the Malay. Three or four of her guns were yet in place, and from the way she had been knocked about by cappon shot it was easy to draw the. by cannon shot it was easy to figure that she had made a hard fight and suffere? great loss of life before she gave in. Even before we began work we found the auger holes bored in her bottom to scuttle her. was that the Star foundered at sea during a heavy gale. The dying statement of the two feet of mud on the floor, and I may was that the Star foundered at sea during a heavy gale. The dying statement of the pirate was never fully investigated for some reason. So far as the investigation went it was proved to be a fact. The pirates had long been scattered, many were doubtless dead, and the idea of bringing the gang to justice was given up as important the gang to j ware and what not, but in actual money ossible.

In the year 1863 I was one of a crew of the cargo had been wool, but we got nother. the English brig Swiftsure, which was making a survey of the islands to the northeast of Madagascar. At the Chagos group, as we were pulling into land one day, with seven men in the boat, we were upset in the surf, and only two of us the cargo had been wool, but we got nothing whatever of value out of it. Indeed, when our work had been finished, we simply had a big hulk resting on land a mile from the beach and were only five gold pieces better off than before. The pirates had swept her clean of treasure, plundering



RIDING ON ITS CREST WAS A GREAT SHIP.

escaped death. My companion was a sailor state we were swept along the coast of the island by a current and finally thrown on shore in a bit of a cove. A boat put off from the brig as soon as the disaster was noticed, but only two bodies were recovered. five, no search was made for the pair of been us cast ashore, and before we had recovus cast ashore, and before we had recovered from our exhaustion and prepared a signal the brig had departed for another field. The island on which we were cast is made to the east of the island in 1867-68 one of a group of nine, and the eastern-most one of all. It is likely the same today as then, having plenty of fresh water, most of it covered with verdure, and wild fruits, shrimps and shell fish so plentiful that a shipwrecked crew of twenty could get along there for months. We and I were inclined to look upon the affair as a lark. We erected a hut in the woods procured fire by rubbing two dry sticks to gether, and after a thorough exploration of our domain, which was not over two miles across in any direction, we slept, at and talked and had a pretty easy time of it. We had been on the island about three months, when we awoke one morning to find the sea like a sheet of glass and the air as still as death. The sky was overcast, and yet of a coppery color, and the birds on the island appeared to be in great alarm. Great flocks of them came in from the sea and all along shore the fight were the sea, and all along shore the fish were leaping out of the water as if it were polluted. After surveying things for a while, Wallace gave it as his opinion that we were in for a typhoon or an earthquake. The sulphury smell in the air inclined him to the latter, and as soon as we had eaten we started for the center of the island. of everything but a couple of trees and a few bushes, and we sought it on account of the tidal wave we knew would surely follow an earthquake. As to a disturbance of the earth, we were helpless, except to keep clear of the forest. It was midday before anything occurred. The menacing look of the sky and the sea increased, and fish by the thousands drove up on the sandy beach to their death. Just about noon, when we were wondering what was to be, the whole island suddenly began to be, the whole island suddenly began to heave and tremble. For what seemed a pretation of what he hears. It is noticed, noon, when we were wondering what was to be, the whole island suddenly began to full minute it was like riding over a choppy sea in a small boat, only the sensa tion was strangely bewildering and made

There was more than one shock, but the est. The three or four which succeede were thrills rather than shocks. They ran through the island from east to west and out to sea, and we heard a chorus of what may be called shrieks of distress from the birds with each vibration. Two or three minutes after the fourth or fifth shock Wallace stood up and looked out upon the sea to the east and shouted to me

"Look! Look! The tidal wave is coming n, and there's a big ship on the crest of it. I sprang up and followed his gaze. Ten miles away there was a wall of water, which seemed to lift its white crest almost to the sky, and to reach north and south as far as I could see. Riding on this crest was a great ship, with her three masts standing erect and some of the yards across. For the first ten seconds the wall seemed to stand still. Then it came rolling on like a railroad train, and almost before I could have counted twenty it struck the shore of our island and swept across it. The island was a good thirty feet above water in every part, while on the hill we were at least a hundred, but all portions save the hill were covered by all portions save the fill were covered by at least ten feet. I had my eye on the ship alone. It came straight for the hill, but as the wave divided it was swept to the left and struck the earth, and was turned full about. While it hung there the waters passed on, and lo! at our feet, resting almost on a level keel, was as

the passengers before murdering them and we did not find in cabin or state room so much as a single bone of human anatomy. We made the ship our home for six months, and were then taken off by a whaler, and our story was the first news received of the long lost ship. The three others were pulled down by the sharks before the boat got to them. Believing this to have been the sad fate of all hulk, and mementos of her have long five, no search was made for the pair of been on exhibition in the British Murkey, no search was made for the pair of been on exhibition in the British Murkey, no search was made for the pair of been on exhibition in the British Murkey, no search was made for the pair of been on exhibition in the British Murkey, no search was made for the pair of The English government sent a manit was estimated that the great ship rose from a depth of over 2,000 feet. Nothing but an earthquake could have lifted her from that depth-nothing but a tidal wave held her up and swept her to our feet.

> ANIMALS' ILLUSIONS. Birds Are More Commonly the

Victims. Birds are perhaps more commonly the victims of illusions than other animals, their stupidity about their eggs being quite remarkable. Last year, for instance, a hen got into a pavilion of a ladies' golf club and began to sit on a golf ball in a corner, for which it made a nest with a couple of pocket handkerchiefs. But many quadrupeds are not only deceived for the moment by reflections, shadows and such unrealities, but often seem victims to illusions largely developed by the imagina-

The horse, for instance, is one of the bravest of animals when face to face with dangers which it can understand, such as the charge of an elephant or a wild boar at bay. Yet the courageous and devoted horse, so steadfast against the dangers he knows, is a prey to a hundred terrors of knows, is a prey to a hundred terrors of the imagination due to illusions, mainly those of sight, for shying, the minor effect of these illusions, and "bolting," in which panic gains complete possession of his soul, are caused, as a rule, by mistakes as to for instance, that many horses which shy usually start away from objects on one side more frequently than from objects on the other. This is probably due to defects

the other. This is probably due to defects in the vision of one or other eye.

In nearly all cases of shying the horse takes fright at some unfamiliar object, though this is commonly quite harmless, such as a wheelbarrow upside down, a freshly felled log or a piece of paper rolling before the wind. This instantly becomes an "illusion," is interpreted as something else, and it is a curious question in equine else, and it is a curious question in equine neuropathy to know what it is that the heuropathy to know what it is that the horse figures these harmless objects to be. When Russian ponies first began to be shipped to Harwich they usually objected to pass near a donkey. This reluctance was explained on the hypothesis that the ponies seldom saw donkeys in Russia and ponies seldom saw donkeys in Russia and mistook them for bears.

Liked the Cider.

Some years ago a well-known foreign prince, who owns a large estate in the Midlands, invited his tenants to a hunt breakfast, at which claret was the principal beverage. After the breakfast, and just before the hounds were thrown off, champagne was handed around in large cups, when one old-fashioned farmer, after taking a long pull at one of the cups and smacking his lips, exclaimed: "Well, your royal highness, I didn't think much of that port wine we had at lunch, but I must say this cider is the best I ever tasted."

Devices to Produce the Mesmeric State Mechanically.

WHIRLING MIRRORS AND CRYSTALS

Influence of Certain Chemicals Upon Sensitive Subjects.

USES OF THE POWER



VEN HYPNOSIS may now be produced by machinery. We are approaching a day when the direct influence of Svengalies will not be necessary throw Trilbies Into subjective states. when hypnotists will exert their powers through machinery set to operate at given times, the

presence of the instruments being unknown to the subjects. The mechanical mesmerizer will then find an essential place in the burglar's tool kit, and we will have to look under our beds to see if such traps have been set by our enemies. The mechanical hypnotizer as now made, however, is strictly a scientific instrument. The government's bureau of education recently purchased a collection of such apparatus, which are new in this country. They will be used by a specialist for studying the values of hypnotic suggestion in the education of the abnormal classes. Experiments will be made determining their effect upon the sensibilities, emotions, breathing, circulation and temperature of the body.

An Elaborate Apparatus.

The most elaborate form of hypnotizer is a small box, containing clock work, surmounted by two horizontal oblong fans, one over the other, revolving rapidly in opposite directions. The fans are studded on each side with a row of circular mirrors, about the size of nickel pieces. The rapid rotation produces an odd flashing effect which greatly fatigues the eyelid muscles of the beholder. This machine is found to be very effective when used upon sersitives who can be thrown into a hypnotic sleep by concentration or sight stimu-

A simpler form of mechanical hypnotizer is a belt of broad tape to be placed upon the forehead and over the temples, being tied at the back of the head. From a me-tallic plate in front protrudes a wire, extallic plate in front protrudes a wire, ex-tending upward in an S-like curve and holding a bright ball of nickel, about the size of a marble, at the end. When this is placed upon the subject the wire is bent until the ball reaches a point above the eye, where it may be seen by the wearer only by intensely straining the evelids. eye, where it may be seen by the wearer only by intensely straining the eyelids. The same effect, as produced by the former nachine is accomplished by this simpler apparatus. These instruments have been invented to serve in substitution for the gestures, known as passes, commonly make by hypnotists. The scientific hypnotist makes movements before and above the eyes of his subject to concentrate his at-tention and to fatigue the eyelid muscles both by course. tention and to fatigue the eyelid muscles both by causing the eyes to follow the movements and by fanning air against them. Fatigue of the muscles of the eyelids is found to be one of the direct causes of sleep. Persons in no mental need of sleep may "read themselves sleepy" under a too bright or a too dim light. A severe breeze against the eyelids will cause the same effect.

Another form of hypnotizer, in this collection, is a large horshoe magnet with an attached armature. It is given to a sensitive who is told to continuously separate and fit together the two parts. A similar and nt together the two parts. A similar magnetic hypnotizer is a steel ring to fit the index finger. The ring is of magnetized steel and is broken at one place, the space being filled by a small steel armature. These two contrivances are used principally for hymoring the more unsophistically. for humoring the more unsophisticated and superstitious sensitives who fos-ter the belief that hypnotism is supernat-ural. The magnet in most cases suggests mystery to the ignorant and sensitives of that class are readily excited by it. The ring device, also called a hypnoscope, is used by some hypnotists for determining sensitives. Hypnotizable persons are al-leged to experience certain tinglings in the skin and twitchings of the muscles while wearing it. A more complicated instru-ment in this collection, which may be used as a hypnoscope, is a bulb-shaped rod, re-sembling an electrode, which may be made to create pressure against the made to create pressure against the palm of the hand by a spring inside. When the pressure is applied the subject is asked if he feels an electric shock. If he so confesses he is rated as a hynotic sensitive Sometimes the whole frame will tremble as a result of this imaginary electrical fluid.

Crystal Visions.

Equally interesting devices of a related class, now growing in vogue among certain experimental hypnotists, are for application to sensitives for the purpose of causing hallucinations known as crystal visions. One instrument of this class is a ball of crystal mounted upon a handle. Mirrors crystal mounted upon a handle. Mirrors and other polished or transparent surfaces are employed for the same effect. The crystal or reflecting medium by producing partly obscured or scattered reflections to the sensitive mind's eye aid the subject in perceiving unnatural mental embodiments of various objects. Many abnormal persons, habitually haunted by phantasms, for which visions they develop appetites, so to speak, employ these crystals and reflectors for throwing themselves into states so to speak, employ these crystals and reflectors for throwing themselves into states during which they may experience what is alleged to be the actual or imagined "sixth sense" or "second sight." Crystal gazing has lately become so popular that many psychic experimentalists in Europe are inpsychic experimentalists in Europe are in-viting tests with the paraphernalia thus employed, and agents were some time since engaged by the Society for Psychical Research to furnish balls for the purpose. Prof. Wm. Romaine Newbold of the University of Pennsylvania recently made an extensive investigation of crystal vision and found that twenty-two subjects out of eighty-six could perceive illusions by gazing into mirrors, surfaces of water and objects of glass varying in form. Phan-tasms appeared to the sensitives usually within five minutes, being preceded directly by cloudiness, hazes of color or illuminations before the eyes. The phantasms varied from dim outlines to brilliant col-ored pictures. Like dreams some of these forms were based upon recent experiences of the subjects, while others were purely fantastic.

An Experiment. A simple experiment in this line may be

tried at home by any one who will sit before an open window, at twilight, keeping his gaze fixed preferably upon some landscape, distant row of houses or collection of con spicuous clouds. If the temptation to wink the eyelids can be resisted until the eyes become greatly fatigued, so as to remain open only at a great strain, the natural images will gradually grow more and more indistinct, and will apparently arrange to rapidly changing forms. The abnorma imagination of a person subject to light hallucinations would readily discern weird phantoms in such a picture. Drugs, such as urethane, sulphonal, paral

dehyde, etc., are now used successfully to dehyde, etc., are now used successfully to produce a sleep which to all appearances is hypnotic. Some foreign hypnotists use ether and chloroform to induce hypnosis. Recent experiments indicate that there is a great similarity between hypnosis and the a great similarity between hypnosis and the action of hasheesh, as well as the newly tested mescal, which is used by certain of our western Indians to produce trances. Phenomena very similar to hypnosis is now noticed also during the ordinary sleep produced by simple anaesthetics, and the question is being asked, Do anaesthetics produce hypnosis? A member of the produce hypnosis? A member of the Royal Chemi-cal Society of London recently demonstrated that man possesses two distinct co that man possesses two distinct consciousnesses. He says that persons under the influence of anaesthetics, while not conscious of what is happening at the time of the operation, are sometimes able, several days after, to describe in detail what was happening to them. What he calls the "works pening to them. What he calls the "work-

HYPNOSIS MACHINES

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Highest Reputation all Over the World. CAUTION: None genuine without the signature of the firm

> "Andreas Saxlehner. On the Label.

aday consciousness" was absent at the time, but the "subliminal consciousness," he says, was present during the operation. Hence anaesthetics destroy the former and only postpone the enregistering of the sensation conductors controlling the latter consciousness. It may be that this "subliminal con-sciousness" is the one affected by hypnot-

Sensitive to Drugs.

Recent laboratory experiments have also been made to ascertain the effects of drugs upon persons in a hypnotic state. Some subjects are found to be so sensitive to drugs while in this condition that they contort themselves in various ways when the substances are not applied directly, but merely held in proximity to their skin, not even touching it. Some chemical substances, even when sealed in tubes, will cause sen-sitives to alter their bodily appearances and physical conditions, producing violent con-vulsions, hallucinations, alterations of the pupils, changes in the pulse-beats, symptoms of joy, grief or anger and other emotional conditions.

The influence of color upon hypnotized persons has also been tested in the laboratory by subjecting sensitives to rays of light passing through various screens of different colored glass. Blue light is found to produce sadness, red light joy, yellow light strong affection and violet or green light variable conditions. Charcot used a sudden ray of intense light as one means or throwing sensitives into the hypnotic

Just as these instruments for producing hypnosis are applied to the sense of sight, other physical methods are applied, in its induction, to the senses of hearing and touch. The condition does not seem to be induced by stimulations of either taste (r smell. Charcot threw some of his subjects into hypnotic states by the sharp and sudden sounding of a large gong. The ticking of a watch has been used with the same success by others the same success by he same success by others, the sensitive being required to concentrate his mind upon the sound, just as he does upon the seeing of the revolving fans or nickel ball. The monotonous chants sung by semi-civilized nations are found to produce the same effect.

Strokes and Passes.

For creating hypnosis through the sense f touch, strokings or pressure upon the skin are resorted to by some hypnotists, while others apply warm plates of metal to different parts of the body. Physiciansrealize that warmth induces natural sleep, while coldness tends to prevent it. Some foreign hypnotists maintain that the crown of the head, roof of the nose, the thumb or elbow are most sensitive to hypnotic stimulation by touch. Some merely scratch the skin of the neck or touch the forehead. The electric battery has been resorted to by a few experimenters, who claim that it is successful as an inducing agent. It is said to cause the same imag-inary effect as the magnet. It is now an easy matter for certain hyp-

notists to transform natural sleep into hypnotic sleep without the subject's knowl-Thus one who goes to sleep in public place may never remember what foolish actions he has been made to do during that period. Hypnotic suggestion is the latest phase of this whole subject which is now interesting experimenters. A sensitive, under hypnotic influence, receives a command from the hypnotist which he will obey on awakening, although he is unconscious of ever having received such a command. This power is used by a physi-cian in Massachusetts, who is said to be able to stop the most severe pain by sug-gestion. Several people report to the Soci-ety for Psychical Research that he has given them suggestions before they have gone to the dentist, with the result that their dentistry has invariably been painless Experiments are now being made as to the value of hypnotic suggestion in education Its medical value has already been proven in France, where such conditions as nervous insomnia, sonambulism, kleptomania, laziness and various forms of moral degeneracy have been cured by its means.

Uses of Hypnosis.

The power of suggestion as an agent in crime is now being talked about in this country. Men are believed to have been hanged for committing murder while acting under hypnotic influence from another. Some celebrated medico-legalists have proposed that laws should be passed defining the responsible murderers in such cases In such an event hypnotism will be as bothersome a plea of defense as insanity is today. The dangers threatened by the day. The dangers threatened by the vicious or careless hypnotist have become legally realized in France and Russia. In the former hypnotism is forbidden for purposes of public amusement, and in the latter no persons except, licensed physicians can practice it It is said that 80 per cent of the people in the world are hypnotizable. The hypnotists, on the other hand, are discovering and improving their powers faster and faster each day. Will they at some future century become the governing class-



to swing one way, there is no use trying to push it _ There is a right to do things. of women in America are sick. and would like to be well. They to get well, but

they are making them in the wrong way. They are taking medicines prepared by incompetent nurses, or inexperienced physicians. They are daily submitting to examinations and local treatment, for which there is generally no necessity. They are grow-ing steadily worse instead of steadily better. There is no reason why almost every wo-man should not be well and strong. Over thirty years ago, Dr. R. V. Pierce, of Buffalo, an eminent and successful specialist in the treatment of the diseases of women, discovered a wonderful specific for woman's discases that has since become world-famous as Dr. Pierce's Favorite Prescription. It cures all forms of female weakness and disease. Its effect is immediately perceptible in the better feeling of the patient. It forces out impurity, soothes the inflammation that is always present in disorders of this kind promotes regularity and store this kind, promotes regularity, and stops debilitating drains on the system. It cures nervousness, irritability, sleeplessness, lack of appetite, lack of vitality.

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es of the earth, and will the great host of sensitives become their slaves? Perhaps that is somewhat the case now. Trustworthy authorities relate hypnotism with the same power by which the teacher im-presses his students, the preacher converts his congregation, the pleader convinces the jury, the cross-examiner "rattles" the wit-ness, or by which the orator holds his audi-ence with hated breath receipter these ence with bated breath, receiving cheers at every nod, although heard and understood by few. According to this, Mr. Bryan is a hypnotist, and doubtless Mr. McKinley is one. JOHN ELFRETH WATKINS, Jr.

Grand Dukes and Contractors A refreshing story is told in the columns

of the Frankfort Gazette: The czar intrusted Count Pahlen, a liberal-minded man, with an inquiry into the causes of the terrible disaster at Moscow on the occasion of the coronation, and the count did not hesitate to tell his majesty, in the presence of Grand Duke Vladimir, that he would have done better not to put the superintendence of the coronation festivals into the hands of the grand duke. This frank declaration staggered the emperor, who asked Count Pahlen to advance his reasons. The count answered: "The grand dukes are in their right place in the army and navy, but if they have to do with purveyors and purveyance they must be cheated." The Grand Duke Vladimir protested against this, but smilingly Count Pahlen reminded him of his own bad experiences in connec-tion with the building of the memorial church to Alexander II. In consequence of this frank attitude of Count Pahlen, the minister of justice was ordered to continue the inquiry. He succeeded in clearing up the dark affair, but when the investigation began to take a very disagreeable turn it was determined to submit it not to the ordinary court of justice, but to the ministerial council-in other words, to burke it



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